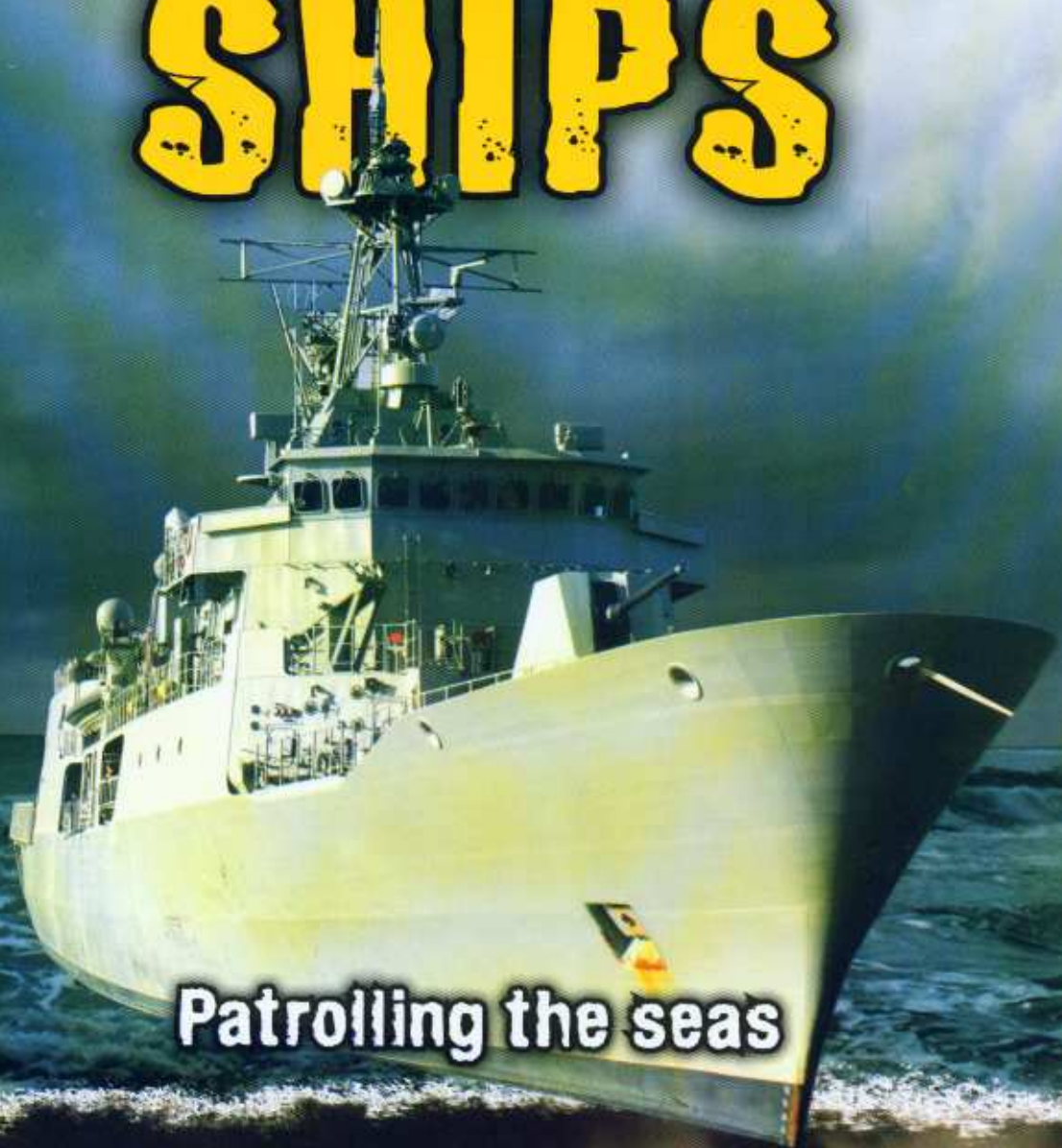


FIGHTING SHIPS



Patrolling the seas

FIGHTING SHIPS

ANJALI KAMATH





Copyright © Leopard Learning 2009
www.leopardlearning.com

Created by Q2AMedia (www.q2amedia.com)

Editor Anand Mani

Art Director Rahul Dhiman

Designers Neha Kaul and Ranjan Singh Garsa

Art Editor Sujatha Menon

All rights reserved. No part of this publication may be reproduced, or stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission of Leopard Learning, nor be otherwise circulated in any form of binding or cover other than that in which it is published and without a similar condition being imposed on the subsequent purchaser.

Published in India by Popular Prakashan Pvt. Ltd.; 301, Mahalaxmi Chambers, 22, Bhulabhai Desai Road, Mumbai – 400026, India for Brainworks Learning Systems Pvt. Ltd.
All rights reserved.

10 9 8 7 6 5 4 3 2 1

ISBN: 978-81-7991-511-0

Printed in India by GH Printers Pvt. Ltd., A-256, Okhla Indl. Area, Phase-I, New Delhi-110 020.

Picture Credits

Front Cover Image :

Max blain : Shutterstock. bg Dan Peretz : Shutterstock.

Back Cover Image :

Yufeng Wang : Shutterstock. bg Dan Peretz : Shutterstock.

Title Image :

Q2A Art Bank

Content Image :

Q2A Art Bank

4 US NAVY : navy.mil. 5 R David Valdez : Unite

States Department of Defense. 10 Algot : Shutterstock. 11t Ricardo Manuel Silva de Sousa : Shutterstock. 11b James Steidl : Shutterstock. 12 U.S. Defenseimagery.mil photo. 13 Fotolia : Andvari. 13bg Julija Sapic : Shutterstock. 14 Library of Congress. 15 Istockphoto. 16 NOAA. 17 Hulton Deursch Collection : Corbis. 18 navy.mil. 19 TEST DEPTH Media. 20 Library of Congress. 21 Michael W. Pocock. 22 Library of Congress. 23 Library of Congress. 24 U.S Navy Photo. 25 U.S Navy Photo. 26 US.Photo.Navy. 27 Jay C. Pugh : Navy.mil. 28 Navy.mil. 29 LCDR JOHN LEENHOUTS : DefenseImagery.Mil. 30 Gary Nichols : Navy.mil. 31 Mate Daniel E. Smith : Navy.mil. 32 Allied Navy : DefenseImagery.Mil.

33 DefenseImagery.Mil. 34 Class Ralph Radford : Navy.mil. 35 Class Josue L. Escobosa : Navy.mil. 36 James C. Davis : Navy.mil. 37 Jose Lopez Jr : Navy.mil. 38 Seaman Chad R. Erdmann : Navy.mil. 39 Michael Starkey : Navy.mil. 40 Katrina Parker : Navy.mil. 41 Dustin Kelling : Navy.mil. 42 Jason A. Johnston : Navy.mil. 43 DefenseImagery.Mil. 44 Jarod Hodge : Navy.mil. 45 Jason A. Johnston : Navy.mil. 46 NOAA. 47 Hulton Deursch Collection : Corbis. 48 Gary Nichols : Navy.mil.

Contents

About Fighting Ships	4
Medieval Warships	10
Line Of Defence	12
Ironclads	14
Dreadnoughts	16
The First Submarines	18
Ships Of World War I	20
Targeting Convoys	22
The War Of The Battleships	24
Aircraft Carriers	28
Cruisers	32
Other Modern Fighting Ships	36
Amphibious Craft	38
Modern Amphibious Assault Ships	40
The Indian Navy	42
Principal Fighting Ships	44
Glossary And Index	46

About Fighting Ships

A fighting ship is different from a normal passenger ship. It is designed for warfare and carries many weapons. Although fighting ships are designed for combat at sea, they also contribute to peacetime operations.

Battleships are the biggest fighting ships with the most number of weapons. Cruisers are smaller and carry lesser weapons than battleships.



Surface fighters

Some naval ships are classified as surface fighters. They are huge and heavily armed, and are used for direct combat with enemy ships. Surface fighters include battleships, battlecruisers, cruisers, destroyers and frigates.

Frigates and destroyers

Frigates and destroyers are also surface fighting ships. A frigate mainly acts as an escort vessel and protects other warships and merchant vessels. Destroyers escort only larger fighting ships and defend them against attacks from submarines and aircraft.

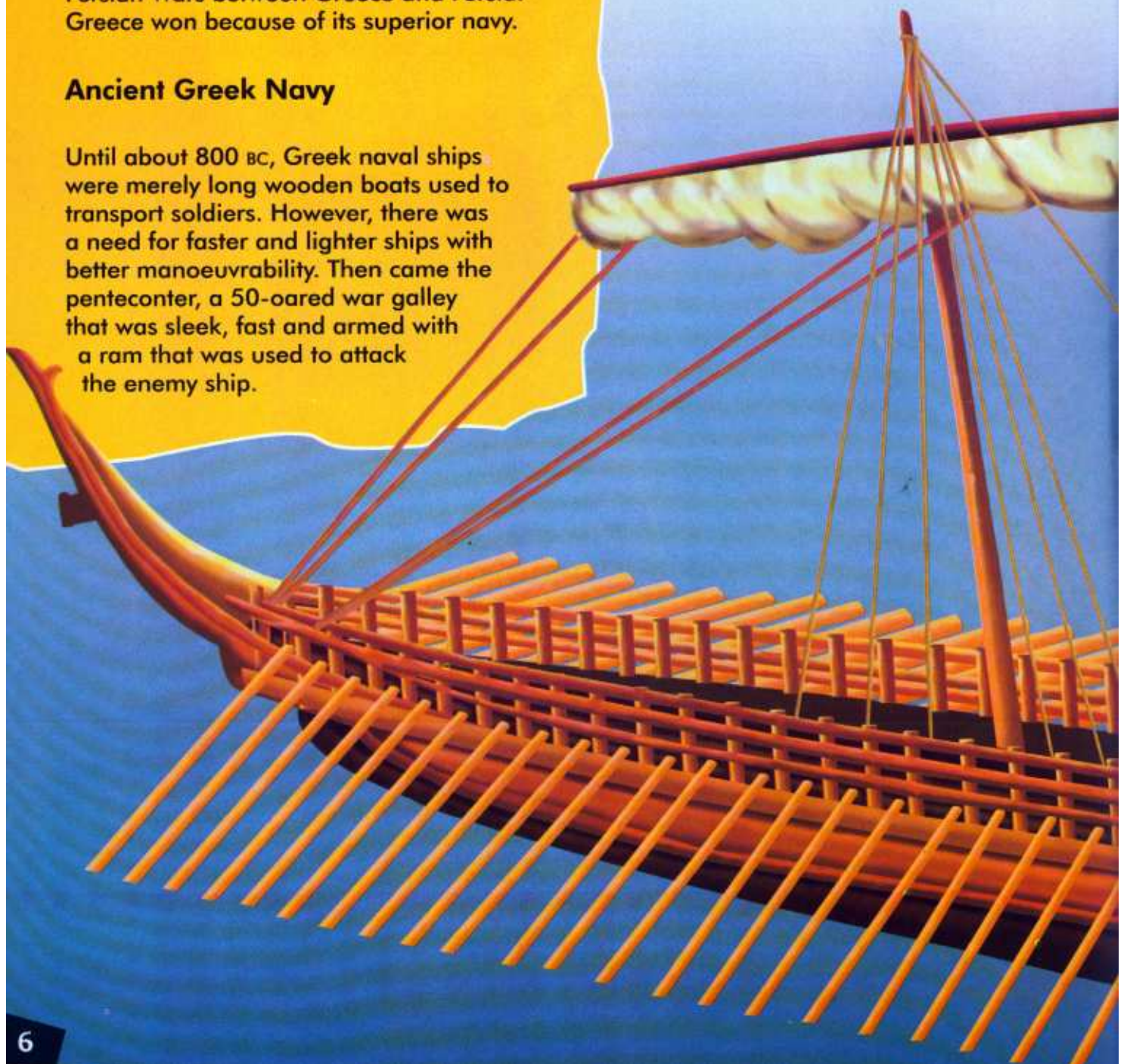
Early war machines


Battles have been fought at sea for more than 3,000 years. The first recorded sea battle was between the Hittites and a fleet from Cyprus in about 1210 BC. The first large naval operations happened during the Persian Wars between Greece and Persia. Greece won because of its superior navy.

Ancient Greek Navy

Until about 800 BC, Greek naval ships were merely long wooden boats used to transport soldiers. However, there was a need for faster and lighter ships with better manoeuvrability. Then came the penteconter, a 50-oared war galley that was sleek, fast and armed with a ram that was used to attack the enemy ship.

▼ The penteconter was equipped with a ram and it was designed specifically as a warship.



A detailed illustration of a bireme, a two-tiered ancient Greek galley, sailing on a blue sea under a clear sky. The ship has a long, narrow hull with two rows of oars visible. A large, light-colored sail is hoisted on a central mast. The ship is shown from a side-on perspective, moving towards the right. In the foreground, the stern of another ship is visible, showing a complex wooden structure with many vertical and horizontal beams.

▲ The sails of the triremes were always taken down before a battle.

The bireme

The faster bireme followed which was about 80 feet long. This ship had two banks of oars. The lower tier was fitted to the hull, while the upper tier was fitted to outriggers that jugged out from the sides of the ship. A bireme had hundred oarsmen, divided equally on each side of the ship.

The mighty triremes

The trireme, developed around 650 BC, was the most effective warship for the Greeks. This ship had three tiers of oars and a fighting deck above the rowers. The ship was bigger, but faster than the other boats. The trireme carried about 170 oarsmen, 20 sailors and 10 marines.

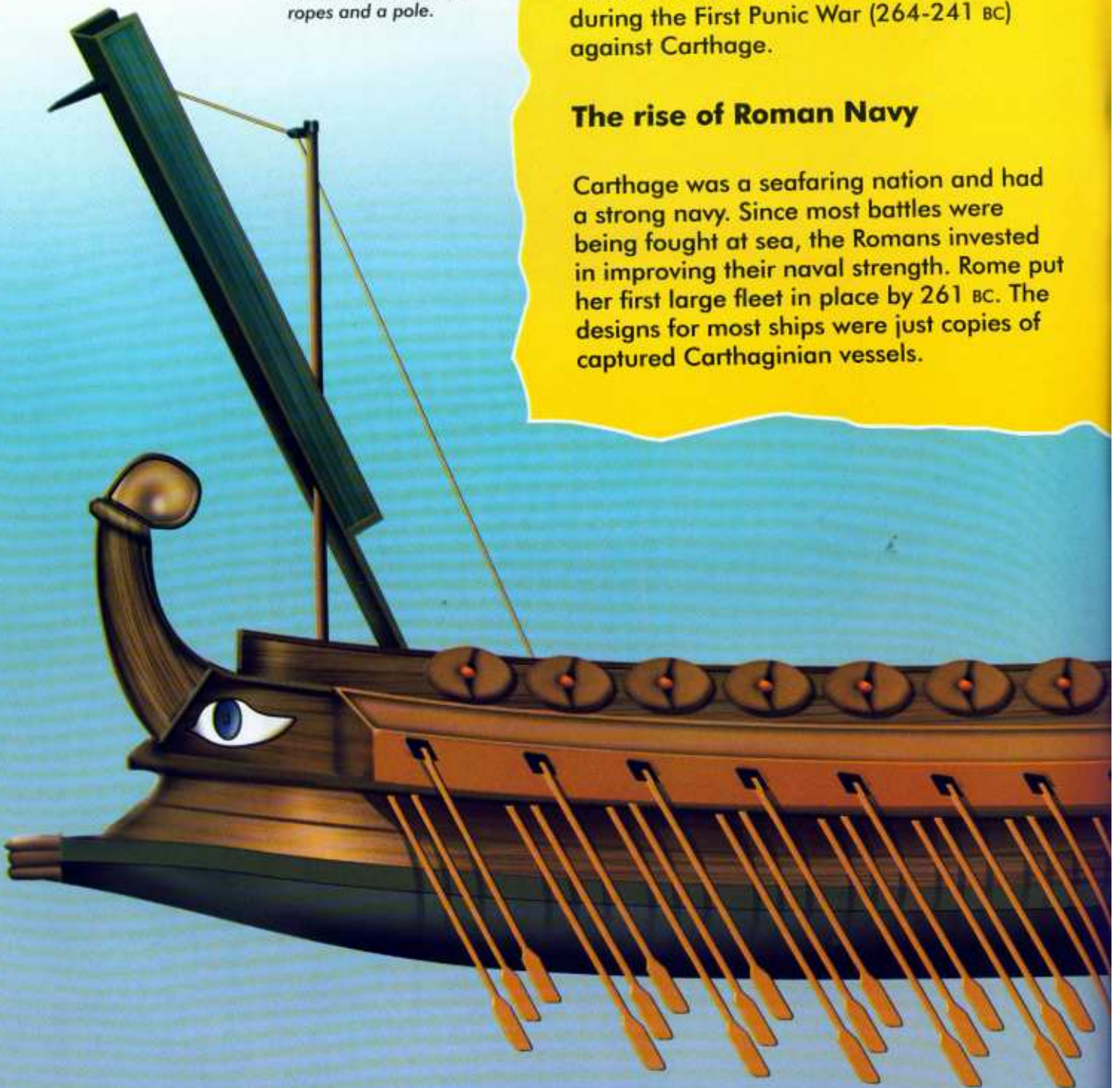
▼ The Romans invented the *corvus*, a light wooden bridge used to board enemy ships. It was raised and lowered on the deck of enemy ships using ropes and a pole.

Roman Navy

Further developments in naval warfare took place during the Ancient Roman Empire. Initially the Roman Republic did not know much about naval warfare, but it learned during the First Punic War (264-241 BC) against Carthage.

The rise of Roman Navy

Carthage was a seafaring nation and had a strong navy. Since most battles were being fought at sea, the Romans invested in improving their naval strength. Rome put her first large fleet in place by 261 BC. The designs for most ships were just copies of captured Carthaginian vessels.



The Roman navy built their first ships by imitating the captured Carthaginian vessels after the First Punic War.



Quadriremes

The trireme was replaced by the quadrireme. Quad means four in Latin - some believed that this ship could have had one row of oars with four men operating each oar. However, others believe that the quadrireme had two rows of oars with two men on each oar, or even three rows of oars with two men on each top oar.

Quinqueremes

The quadriremes were closely followed by the quinqueremes. These ships probably had three rows of oars with two men rowing each oar on the top two tiers. The ship is said to have over 300 oarsmen, 120 marines and 50 sailors. This made the vessel slow and very difficult to manoeuvre.



Medieval Warships

Over the years fighting ships evolved from the early oared-vessels into sophisticated vessels propelled by massive sails. Though fighting ships in the period from the 16th to the 18th century were heavier, they were stronger and faster than the ones before them.


Longships were primarily used to raid coastal and inland settlements during the European Middle Ages.

The longship

The longship was the ship of the Vikings. The ship was long, narrow and light. It had a shallow draft and could sail on shallow waters. It had a huge rectangular sail made of many pieces of wool held together with leather strips. During combat, however, the ship was propelled using oars, as sometimes there was not enough wind to power the ship.

Galleys

Galleys were large ships that were propelled by oars. The triremes and quadriremes were early forms of galleys. During the middle age, galleys had a single row of oars and a huge square sail. During the 14th century, a larger form of galley, with three masts, a forecastle and an aft castle became popular. This design further evolved to give the carrack, a sailing ship with four masts.



The rowers of these ships were either slaves, prisoners of war, or (later) convicts. They were usually chained to benches set along the sides.



Galleons

The galleons were very popular with European countries between the 16th and 18th centuries. The galleon was a very large ship with many decks. It was made from oak, pine and other hardwood. Galleons were sailing ships and had three to five masts. They were heavily armed and carried cannons even while transporting cargo.

The military disadvantage of the Galleon was proved clearly by the defeat of the Spanish Armada (1588).

Line Of Defence

By the late 1600s, the navy had become the most important defence arm. Naval battles got fierce, with the use of long guns and cannons. European nations began to focus on creating new naval tactics and ships.

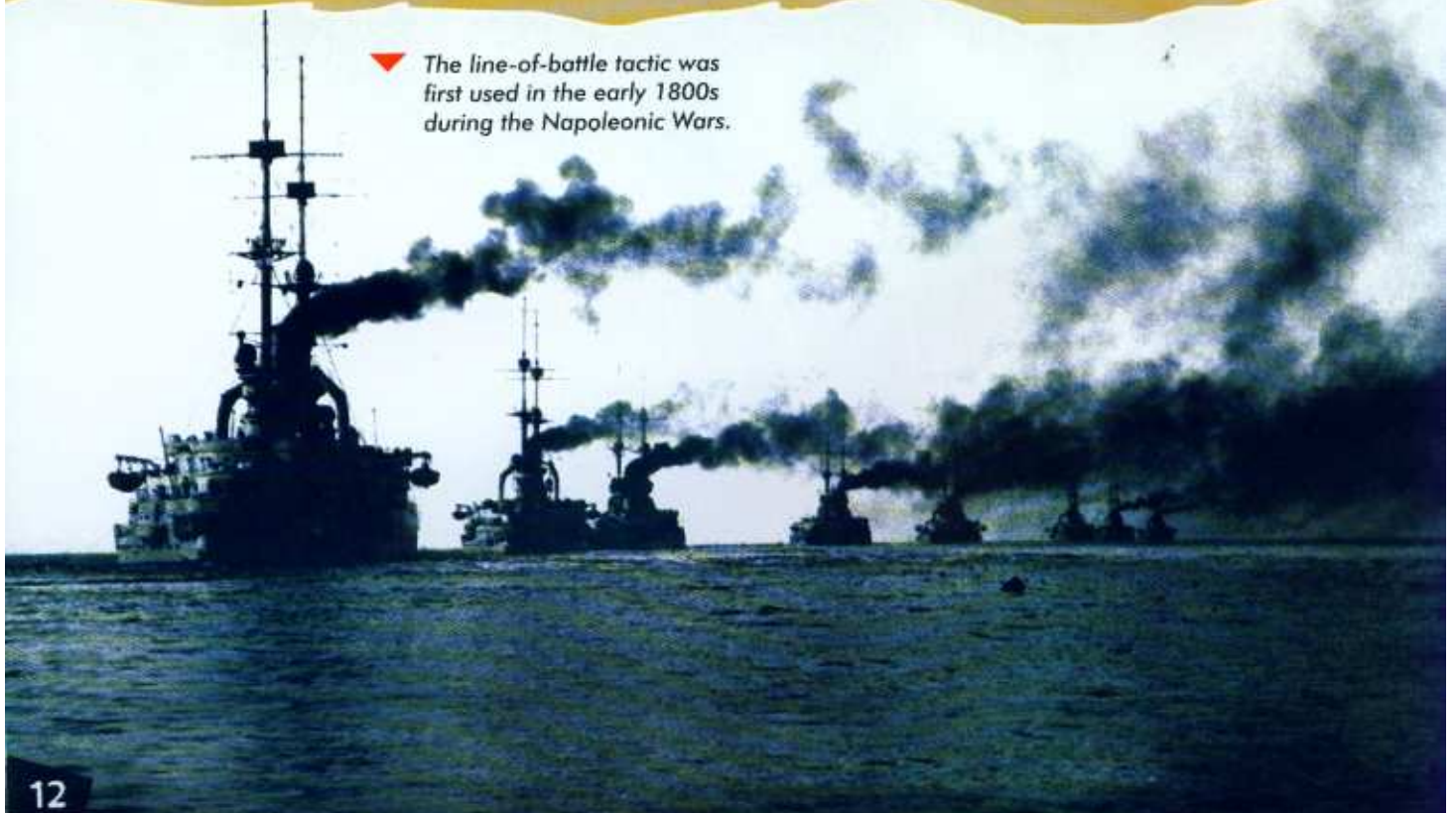
On the line

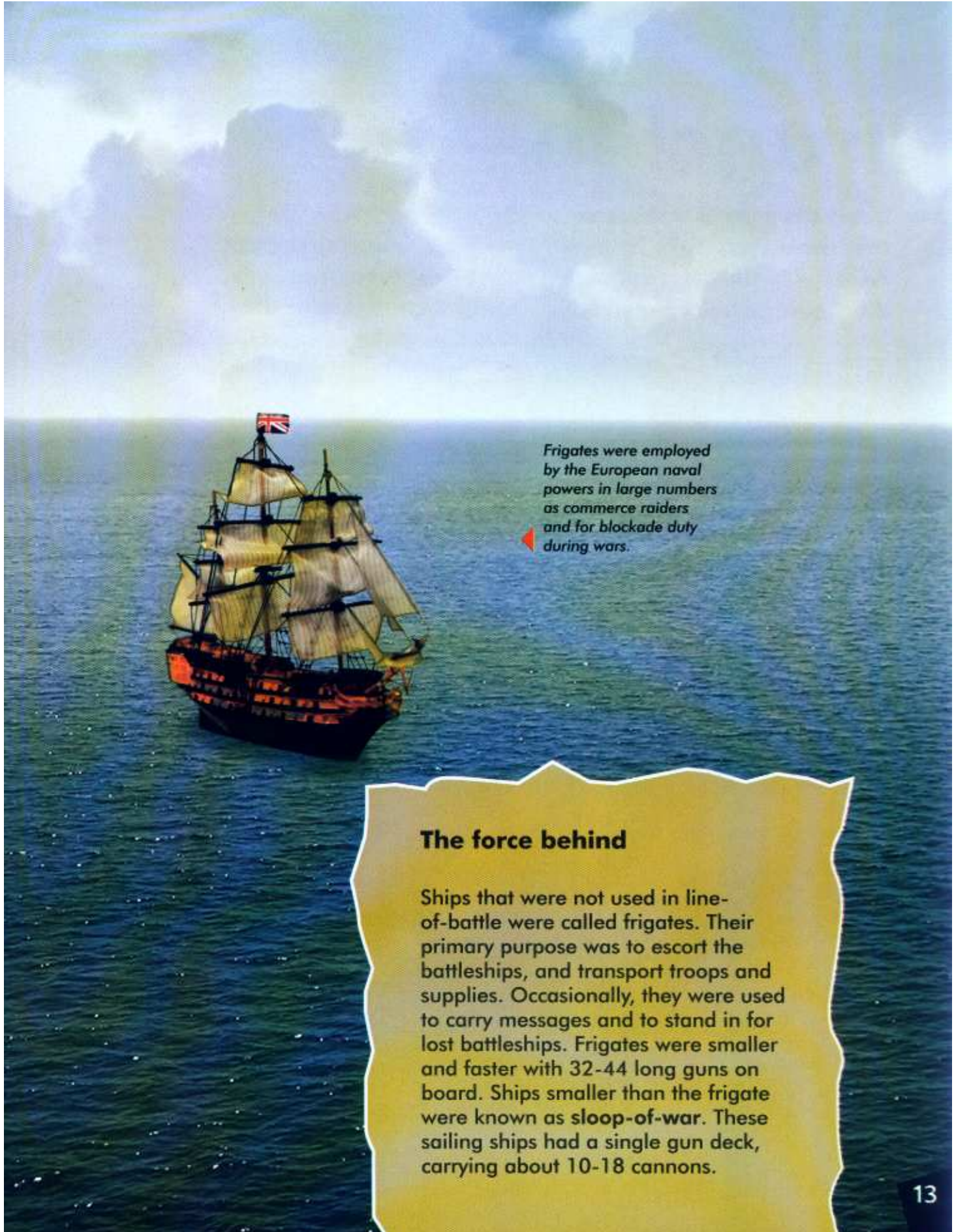
It was one of the most popular tactics of the time. Ships would stand in line, with one side facing the enemy. The soldiers could then fire their guns from the side of the ship without hitting their own fleet. Only a few powerful ships could stand in this line of battle. They were known as "line-of-battle" ships. Over time this term was shortened to "battleship".

Rating battleships

The British Royal Navy first started the system of rating its battleships. First-rate battleships had three gun decks and carried 100 guns or more. They were huge but slow. A second-rate ship carried only 90-98 guns on board. A third-rate battleship carried only 64-80 guns, but was faster and easier to handle.

▼ The line-of-battle tactic was first used in the early 1800s during the Napoleonic Wars.





Frigates were employed by the European naval powers in large numbers as commerce raiders and for blockade duty during wars.

The force behind

Ships that were not used in line-of-battle were called frigates. Their primary purpose was to escort the battleships, and transport troops and supplies. Occasionally, they were used to carry messages and to stand in for lost battleships. Frigates were smaller and faster with 32-44 long guns on board. Ships smaller than the frigate were known as **sloop-of-war**. These sailing ships had a single gun deck, carrying about 10-18 cannons.

Ironclads

Ironclads were warships armoured with thick iron plates that protected them from gunfire. Armour was first used on ships in the Far East during the 16th century. However, it became popular only in the mid-1800s.

Birth of the ironclad

Ironclad ships were quite common in 16th century Japan and Korea. The Japanese ironclads were known as tekkousen, meaning iron-armoured ships. They carried cannons and large rifles on board. In Korea, armoured ships were developed by Admiral Yi Sun-shin to fight Japanese invasion during the Seven-Year War (1592-98). The ships, were known as geobukseon, or turtle-shaped ships.

▼ The French ship, *La Gloire* was designed by the famous French naval architect, Dupuy De Lome.



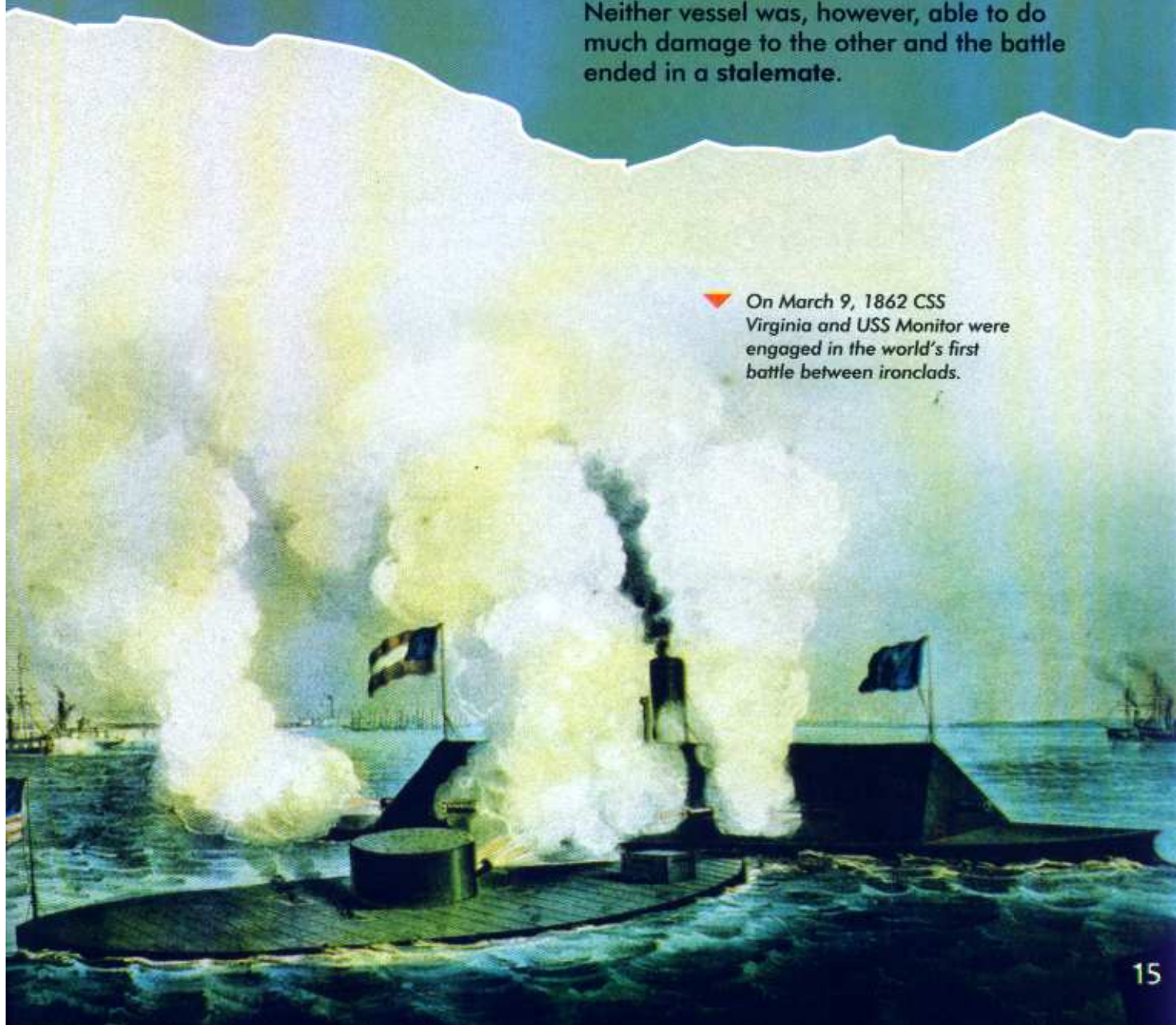
Ironclads in the West

It took a longer time for the ironclad to establish itself in Europe. France was the first European nation to use the ironclad. In 1859, the French navy launched its first ironclad fighting ship, the *La Gloire*, a wooden ship covered with iron plates. The British soon came up with their own ironclad, the *Warrior*. Unlike the *La Gloire*, the *Warrior* was completely made of iron.

Ironclads in America

Steam-powered ironclads were first used in a conflict during the **American Civil War** (1861-65). The first ironclad to be used was the Confederate vessel *CSS Manassas*. It had a turtleback ram, used to break the hulls of enemy ships. The most memorable battle was the one between the *CSS Virginia* and the Union Navy's *USS Monitor*. On March 9, 1862 both ironclads were engaged in the world's first battle between ironclads. Neither vessel was, however, able to do much damage to the other and the battle ended in a stalemate.

▼ On March 9, 1862 *CSS Virginia* and *USS Monitor* were engaged in the world's first battle between ironclads.



Dreadnoughts

In 1906, the British Royal Navy launched the HMS Dreadnought, a revolutionary battleship that made all other ships before it seem outdated. The battleship was so advanced that all new battleships were commonly known as dreadnoughts. The older ships were known as pre-dreadnoughts.

▼ *The British Royal Navy built the Royal Sovereign class of pre-dreadnought ships.*

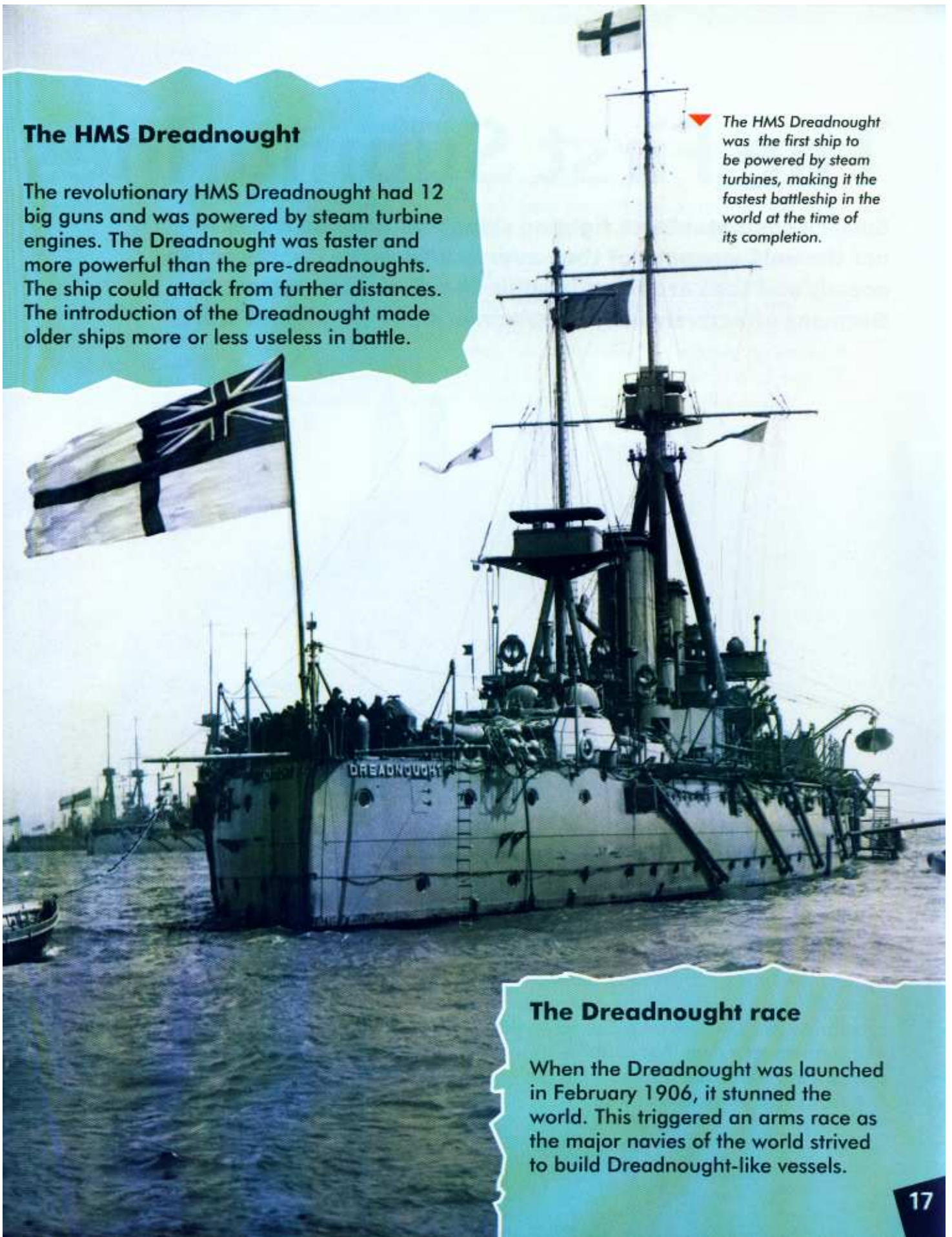
The pre-dreadnoughts

Pre-dreadnoughts were battleships built between 1890-1908. They replaced the ironclad warships. Built from steel and protected by hardened steel armour, these ships usually had four big guns, supported by lighter weapons. However, with the increased use of accurate torpedoes, big guns became a necessity for fighting. With this in mind, the British Royal Navy decided to build an all big-gun battleship.

The HMS Dreadnought

The revolutionary HMS Dreadnought had 12 big guns and was powered by steam turbine engines. The Dreadnought was faster and more powerful than the pre-dreadnoughts. The ship could attack from further distances. The introduction of the Dreadnought made older ships more or less useless in battle.

▼ The HMS Dreadnought was the first ship to be powered by steam turbines, making it the fastest battleship in the world at the time of its completion.




The Dreadnought race

When the Dreadnought was launched in February 1906, it stunned the world. This triggered an arms race as the major navies of the world strived to build Dreadnought-like vessels.

The First Submarines

Surface combatants, or fighting ships that fight on water are not the only weapons of the navy. Hidden in the depths of the oceans and seas are fighting ships known as submarines. The Germans effectively used submarines during the World Wars.



▼ *Nautilus was commissioned by Napoleon Bonaparte and launched in France in 1800.*

Early submarines

A Dutch inventor, Cornelius Jacobszoon Drebbel, made the first submarine in 1620. It was a crude machine that was propelled by oars. An American inventor named David Bushnell developed the first military submarine in 1775. His ship, called Turtle was a spherical vessel that could seat only one person. It was first used during the American War of Independence.

The Nautilus

The first practical submarine was the Nautilus, launched by France in 1800. Designed by the British inventor, Robert Fulton, the Nautilus was made of iron covered with copper sheets. It had an observation tower on top and manual propellers. The ship had a folding mast and sail that it could use to sail on the surface. The Nautilus successfully sank two fighting ships during tests. However, neither France nor Britain deployed the submarine in their navies.

Later designs

The first mechanically powered submarine was the *Ictineo II*. It was the world's first steam powered submarine and was invented by a Spanish engineer, Narcis Monturiol. Launched in 1864, the *Ictineo II* could carry two passengers, dive to depths of 30 m (96 feet) and stay under water for two hours. An Irish inventor, John Phillip Holland, developed the first diesel and electric powered submarine in 1897. The diesel engine was used above water, while the electric battery powered it under water. In 1900, the French built a steam and electric submarine, *Narval*, using the classic twin-hull design.

▼ Modern submarines can travel faster when submerged in water than they can on the surface.



Ships Of World War I

World War I is most remembered for its battles on land and trench warfare. However, naval battles played an important role in the Allied victory.

▼ *The first victory of a Q-ship occurred on June 23, 1915, when U-40 was sunk near Aberdeen by the submarine HMS C24, cooperating with the Q-ship Taranaki.*

The fleets

The British fleet had 22 dreadnoughts and about 42 destroyers. The German fleet was not as large but it was equally powerful. The Germans had the U-boat – the most dreaded fighting machine.

The U-Boat

U-boat is an abbreviation of the German word *Unterseeboot* (undersea boat), and refers to military submarines. At the start of World War I, Germany had 48 submarines in service or under construction. U-boats were used effectively in enforcing a naval blockade against enemy ships. The primary targets for the U-boat were the merchant convoys bringing supplies from the British Empire and the United States to Great Britain.

The Q-Ship

The Allied navies introduced Q-ships to tackle the German U-boats. The Q-ship was designed to be a wolf in sheep's clothing. Also known as Q-boats, Decoy Vessels, Special Service Ships or Mystery Ships, these were heavily armed merchant ships with concealed weapons. They were designed to lure submarines into making surface attacks. When the submarine attacked, the ship would reveal its weapons and open fire.

▼ *From 11 cities and 19 shipyards based along the North Sea and the Baltic, Germany turned out more than 1000 U-Boats. 103 were built between 1935-1940 and a staggering 1050 were built from 1941 to the end of the World War.*



Targeting Convoys

Military submarines were first used to attack enemies during World War I. The Germans used submarines to destroy enemy ships.

▼ A torpedo from a German U-boat sank the passenger liner, 'The Lusitania,' in about 18 minutes. The speed of the sinking accounted for a large number of casualties.





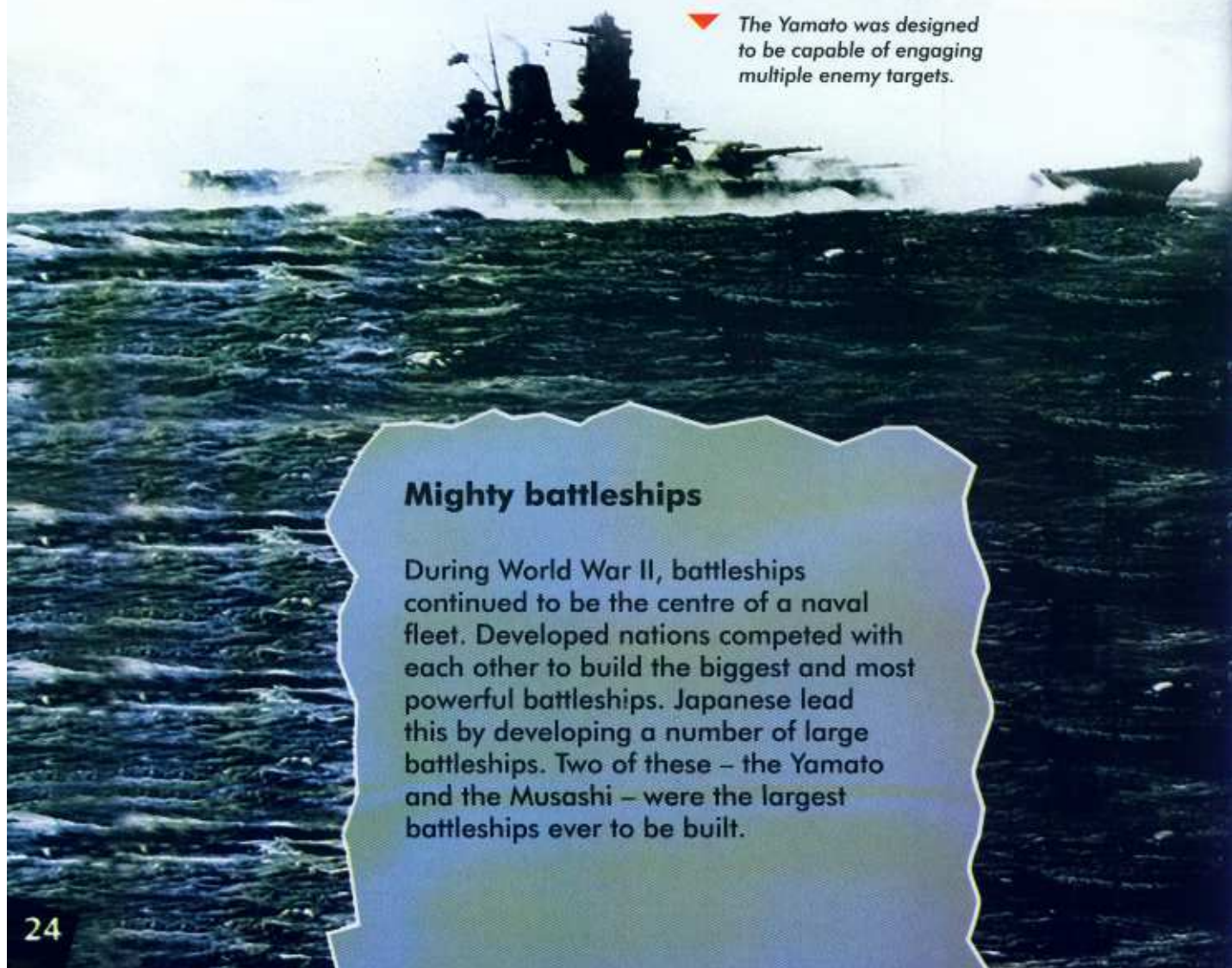
◀ The sinking of the Lusitania provoked many war posters in Britain and USA.


Sinking merchant ships

During World War I, the Germans first targeted enemy warships with their U-boats. The British responded by imposing a naval blockade on Germany preventing merchant ships from entering German waters. The Germans retaliated by using their U-boats to sink British merchant vessels. The Germans were careful not to attack any neutral ship. However in May 7, 1915, the German U-boat, U 20 sank a passenger liner Lusitania, killing 1,198 passengers including 128 Americans. This attack prompted the United States to join the war against Germany.

The War Of The Battleships

After World War I, countries around the world began to build their navies. The naval tug-of-war between Britain and Germany had proved to the world the importance of a strong navy. In World War II, the British Navy was replaced by the United States as the single most powerful navy in the world.

A large Japanese battleship, the Yamato, is shown sailing on the ocean. The ship is dark and has a complex superstructure with multiple masts and gun turrets. It is moving from left to right, leaving a white wake behind it. The water is dark blue with whitecaps. The sky is a pale, hazy blue.

 *The Yamato was designed to be capable of engaging multiple enemy targets.*

Mighty battleships

During World War II, battleships continued to be the centre of a naval fleet. Developed nations competed with each other to build the biggest and most powerful battleships. Japanese lead this by developing a number of large battleships. Two of these – the Yamato and the Musashi – were the largest battleships ever to be built.

The fall of the Japanese giants

The Yamato and the Musashi battleships were vital to the Japanese during the Battle at Leyte Gulf in 1944. The Musashi took 17 bombs and 20 torpedo hits before going down. The Yamato survived the battle but was destroyed during Operation Ten-Go following the U.S. invasion of the island of Okinawa in Japan.

Other WW II battleships

Other well-known battleships include the Iowa of the United States Navy and the Bismarck of Germany. The Iowa had three powerful gun turrets, an anti-ship cruise missile and an array of anti-aircraft weapons. The rear end of the ship was used as a flight deck to launch aircraft. The Bismarck was famous for sinking the British battlecruiser, HMS Hood.



◀ The German battleship Bismarck is one of the most famous warships of the Second World War. Named after German chancellor Otto von Bismarck, this battleship moved more than 50,000 tonnes fully loaded.

Balloon carriers

On 12 July 1849, the Austrian Navy ship Vulcano launched a manned hot air balloon attempting to drop bombs on Venice. The attempt failed when the winds blew the balloon back. It, however, led to the development of balloon carriers, or tenders, during World War I. The balloons were intended to work as aerial observation posts. These were later either decommissioned or converted to seaplane tenders after the war.

Airfields on the sea

The first known instance of using a ship for airborne operations occurred in 1806. Lord Thomas Cochrane of the Royal Navy launched kites from the 32-gun frigate HMS Pallas in order to drop propaganda leaflets on French territory.

Balloon carriers were developed to enable ships to have broader vision of the surrounding waters.



Seaplane carriers

On March 28, 1910, Frenchman Henri Fabre invented the first seaplane. In December 1911, the French Navy launched *La Foudre*, the first seaplane carrier. The ship carried float-equipped planes under hangars on the main deck. The planes would be lowered to the sea by a crane from where they could take off for missions. Many cruisers often carried a catapult-launched seaplane for surveying. These were highly successful during World War II.

The birth of a concept

In 1909 the French inventor Clément Ader published a plan for a ship, which he described with a flat flight deck, an island superstructure, deck elevators and a hangar bay. A number of experimental flights were made to test the concept. Eugene Ely was the first pilot to launch from a stationary ship in November 1910. On 18 January 1911, he became the first pilot to land on a stationary ship. This was the birth of the modern aircraft carrier.

A seaplane carrier or tender is a ship which provides services necessary for operating seaplanes. These ships were the first aircraft carriers and appeared just before World War I.



Aircraft Carriers

Until the early 1920s all carriers were created by modifying the decks of merchant ships. In December 1922, the Japanese commissioned the Hosho. This was the first ship designed and built to serve as an aircraft carrier.

▼ *An aircraft carrier is a warship designed with a mission to send and recover aircraft, acting as a seagoing airbase.*

Fleet Aircraft Carrier

The World War II saw the first large-scale use and refinement of the aircraft carrier. They soon displaced the battleship becoming the largest ships operated by navies. The change was a result of the growth of air power. Following the war, carrier operations continued to increase in size and importance. Super-carriers have now become the pinnacle of carrier development.

Light aircraft carriers

Prior to the beginning of World War II, American President Franklin D. Roosevelt noticed that no new aircraft carriers were expected to enter the fleet before 1944. He proposed the conversion of several cruisers to fast carriers, and were classified as light aircraft carriers. Later, the Royal Navy made a similar design, which served them and Commonwealth countries after World War II. One of these carriers, HMS Hermes, is still in use as is India's INS Viraat.

Escort carriers

To protect Atlantic convoys during World War II, the British developed what they called Merchant Aircraft Carriers, which were merchant ships equipped with a flat deck for half a dozen aircraft. These operated with civilian crews and carried their normal cargo besides providing air support to the convoy. As there was no lift or hangar, the aircraft spent the entire trip sitting on the deck. They served as a temporary measure until dedicated escort carriers could be built.

▼ The escort carriers were small aircraft carriers utilised by the British Royal Navy, the Imperial Japanese Navy and the United States Navy in World War II.



Minesweepers

Minesweeper is another essential part of a country's navy. This is a military ship designed to locate and destroy naval mines placed in the sea by enemies. The same ships are sometimes used for laying mines.

Silent explorers

Minesweepers generally detect and neutralise mines before the launch of other naval operations. The first dedicated minesweeper was purpose-built during World War I. These vessels are often constructed with hulls of wood, plastic or low-magnetic steel. They are also designed to create much less noise than other ships so that they do not detonate mines.

▼ Onboard, the minesweepers have specialised sonar and radar to detect and track mines. To avoid detonation of mines, minesweepers are designed to produce much less noise than other ships.



Minehunters

A minesweeper is generally designed to clear an area of a large number of relatively simple mines. A minehunter, on the other hand, is a ship, which is better equipped to handle more modern mines which need to be individually located on the sea bed and destroyed. Both kinds of ships are sometimes collectively called MCMVs - Mine Counter Measure Vessels.

Specialised equipment

These vessels have specialised sonar and radar onboard to detect and track mines. Their weaponry is largely designed for the destruction of mines and includes specialised mortars and short-range torpedoes. They also have anti-aircraft and other combative weapons.

▼ Minehunters are generally small, shallow vessels, as they are often called upon to work in enclosed bodies of water such as shipping channels or harbours.



Cruisers

The term "cruiser" was commonly used in the 17th century to refer to an independent warship. The term referred to the purpose or mission of a ship, and was not a category of vessel. The name, however, stuck and was used to refer to a small, fast warship suitable for such a role.

▼ *The first steam powered light cruisers were built for the British Royal Navy.*



Light cruisers

The light armoured cruiser developed at around the same time. With developments in engine technology, especially turbine engines, it became possible for light, fast cruisers to carry armour. The vessel was protected by a belt of side armour, and has an armoured deck and protective bunkers. The first light armoured cruisers to be commissioned were the British Town Class cruisers in 1910.

Battlecruisers

The growing size and power of the armoured cruiser resulted in the battlecruiser. The vessel was larger than the armoured cruiser and carried weapons similar to the revolutionary dreadnought. The ship was the brainchild of British admiral Jackie Fisher who envisioned that a fleet of large, fast, armed vessels would be able to hunt down enemy cruisers and armoured cruisers with overwhelming fire superiority. The first battlecruisers were commissioned into the Royal Navy in 1907.

An aerial photograph of a large aircraft carrier, likely a Russian cruiser, sailing on the ocean. The ship is viewed from a high angle, showing its full length and the flight deck. The sea is dark blue with whitecaps, and the sky is filled with large, white, billowing clouds. The ship's superstructure is complex, with many antennas and radar masts. The flight deck is marked with yellow and white lines, and several aircraft are visible on the deck.

Aircraft cruisers

The aircraft cruiser or cruiser-carrier was originally a 1930s experiment. Navies tried to create an all-round warship by combining the aircraft carrier and the cruiser. These were armed with relatively heavy **artillery**, mines and a number of aircraft fitted with floaters. A more modern derivative of the aircraft cruiser is the helicopter cruiser. An example of the aircraft cruiser is the heavy aircraft carrying Russian cruiser Kiev.

▼ Aircraft cruisers were usually armed with heavy artillery and mines.

Destroyers

A destroyer is a fast and manoeuvrable warship intended to escort larger vessels. Its objective is to defend the vessels in a fleet, convoy or battle group against smaller, short-range but powerful fighting ships.

Fight against Torpedo boats

The invention of self-propelled torpedo in the 1860s led to the emergence of the destroyer. Navies could now destroy a superior enemy battle fleet from a distance using torpedoes. Fast boats armed with torpedoes were built and called torpedo boats. Destroyers later took over the role of torpedo boats and were fitted with torpedo tubes as well as guns.

▼ Torpedo ships were created to counter battleships and other large, slow and heavily armed ships with speed and agility.



Modern destroyers

Modern destroyers are the heaviest surface combat ships in general use. Also known as guided missile destroyers, they are equivalent in size, but vastly superior in firepower to the cruisers of World War II era. Cruise missiles (these can be nuclear) have been added to their arsenal. The American Arleigh Burke class of destroyer is perhaps the most powerful warship in history.

Anti-submarine warfare

By World War II, submarines and aircraft had become important weapons of naval warfare. Fleet destroyers were immediately modified to deal with this threat. In addition to their existing light guns, depth charges and torpedoes, they were fitted with new anti-aircraft guns, radar and forward-launched anti-submarine warfare weapons.

▼ The American Arleigh Burke Class, is named after Admiral Arleigh "31-Knot" Burke. It's the most famous American destroyer of World War II.



Other Modern Fighting Ships

Modern navies do not solely depend on big ships. Several tasks require small, agile vessels that are capable of achieving high speeds.

Corvettes

A corvette is a small, agile warship that is lightly armed. Earlier corvettes were smaller than frigates but now they are almost equal in size and role. These ships are usually armed with medium- and small-calibre guns, surface-to-surface missiles, surface-to-air missiles and underwater warfare weapons. Many can even accommodate a small or medium anti-submarine warfare helicopter.

Some corvettes can carry a small anti-submarine warfare helicopter.



Torpedo boats

A torpedo boat is a relatively small and fast naval ship designed to carry torpedoes into battle. These ships were created to attack battleships and other large, slow and heavily armed ships. Torpedo boats are largely obsolete today, but boats similar to them are still in use. They are armed with long-range anti-ship missiles that can be used at ranges between 30-70 km.

Frigates

The term frigate has been used for warships of many sizes and roles over the past centuries. In the 18th century, the term referred to ships, which were as long as "on-the-line" ships and had square sails. They carried lighter armament and were used for escorting and patrolling. In modern navies, frigates are used to protect other warships and merchant ships. Their speed and agility makes them especially suited to anti-submarine warfare.

▼ Most modern frigates are equipped with some form of offensive or defensive missiles.



Amphibious Craft

The history of the amphibious operations dates back to 1899, when a French staff officer designed an armoured landing craft fitted with a detachable landing ramp.



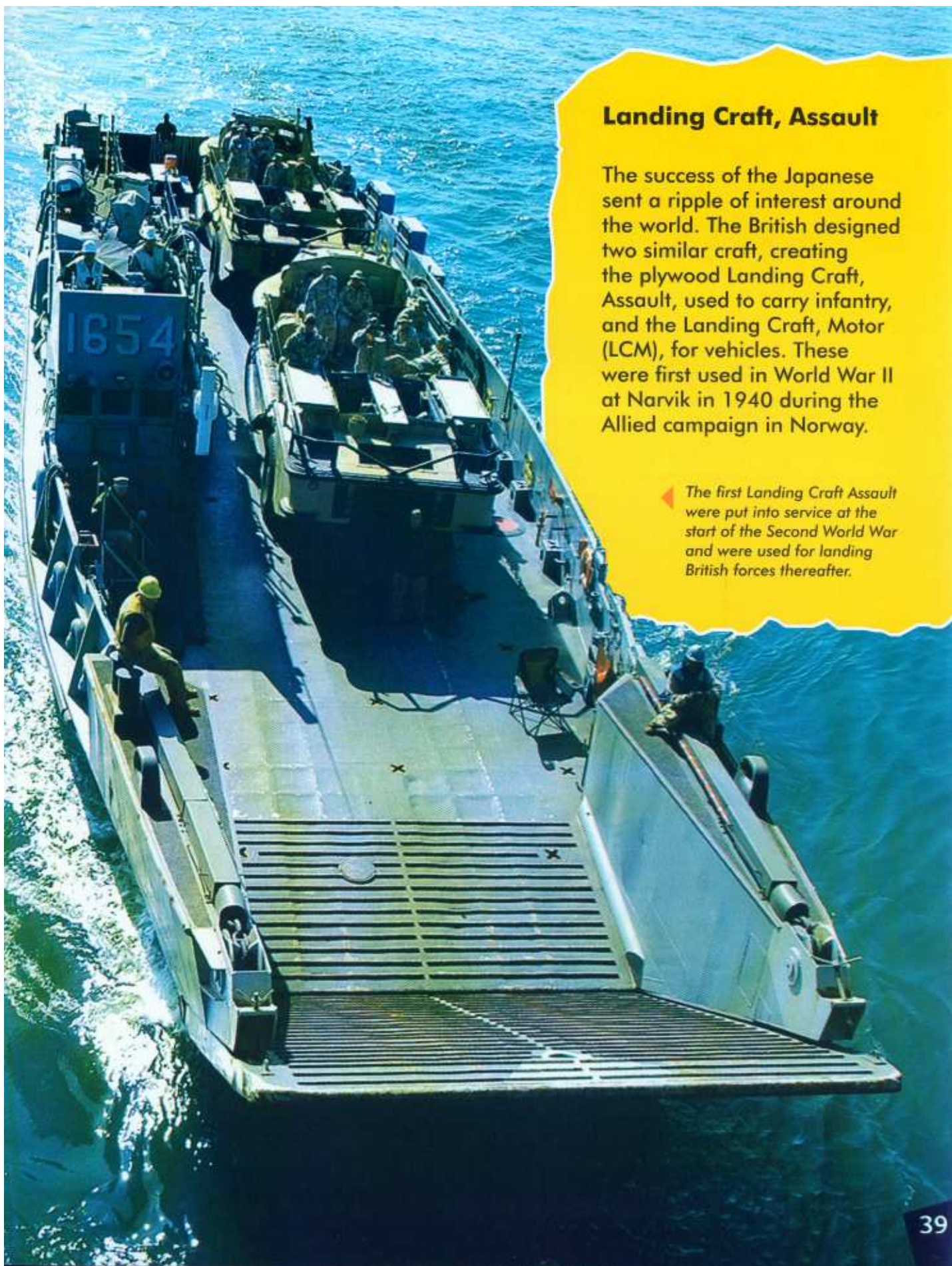
▲ Landing crafts are boats used to convey a landing force (infantry and vehicles) from the sea to the shore during an assault.

First landing

The first seaborne landings were made in 1915 on the Gallipoli peninsula. In 1917, specialist landing craft were designed to land British troops engaged in an amphibious operation on the Flanders coast, but these were never mounted.

Landing Craft Vehicle, Personnel

USA led the development of Modern landing crafts. The U.S. Marine Corps experimented with designs throughout the 1930s. Andrew Higgins, a private marine engineer, combined his 36-foot Eureka boat design with the Japanese hinged bow-ramp to create the basic landing craft of today.



Landing Craft, Assault

The success of the Japanese sent a ripple of interest around the world. The British designed two similar craft, creating the plywood Landing Craft, Assault, used to carry infantry, and the Landing Craft, Motor (LCM), for vehicles. These were first used in World War II at Narvik in 1940 during the Allied campaign in Norway.

◀ The first Landing Craft Assault were put into service at the start of the Second World War and were used for landing British forces thereafter.

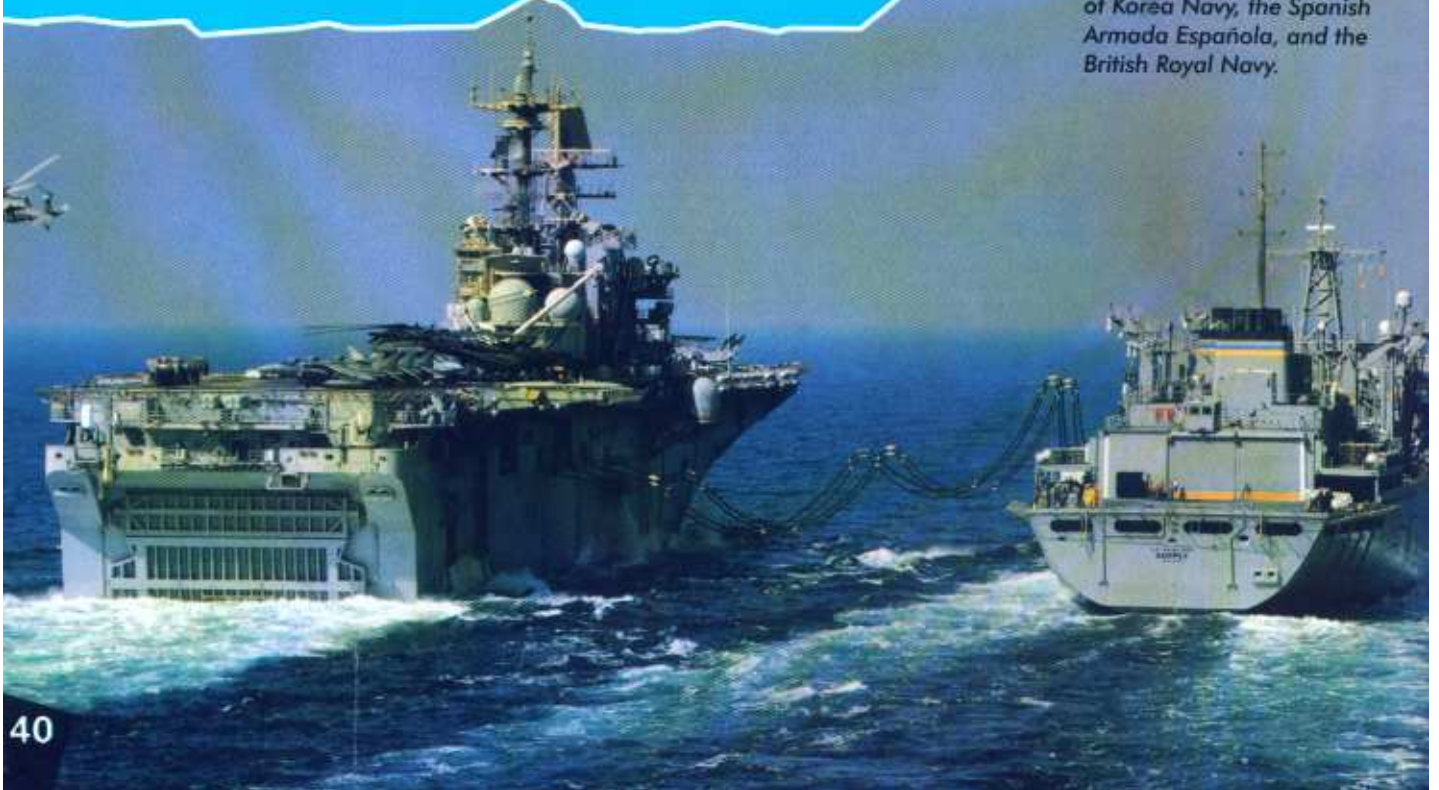
Modern Amphibious Assault Ships

The landing craft of World War II evolved into the amphibious assault ships of today. The modern amphibious assault ship is a type of helicopter carrier designed to land and support ground forces on enemy territory by an amphibious assault.

Support role

Amphibious assault ships resemble aircraft carriers but their roles in combat are substantially different. They are designed to carry combat and transport helicopters. These helicopters have the capability to transport troops to the shore and support the ground troops. Most of these ships can also carry or support landing craft such as air-cushioned landing craft.

▼ The largest fleet of amphibious assault ships is operated by the United States Navy, the French Marine Nationale, the Republic of Korea Navy, the Spanish Armada Española, and the British Royal Navy.



Designed like aircraft carriers

Amphibious assault ships resemble aircraft carriers in design. The flight deck is used to operate helicopters for landing troops and supplies. It also operates VTOL (Vertical Take Off and Landing) jets to provide air support to landing operations.

Largest fleet


The largest fleet of amphibious assault ships is maintained by the United States Navy. It includes the Tarawa class dating back to the 1970s and the larger Wasp class ships that debuted in 1989. The French, Korea, Spain, and the British also use amphibious assault ships.

♥ The amphibious assault ships operate helicopters and VTOL aircraft on their flight decks.



The Indian Navy

The history of the Indian navy dates back many centuries. The navies of the Maurya, Chola, Vijayanagara, Kalinga, Maratha and Moghul empires ruled the oceans in and around India. The two notable naval chiefs Kanhoji Angre and Kunjali Marakkar are considered among India's finest warriors.

A large guided missile frigate, the INS Brahmaputra, is shown sailing on the ocean. The ship is white with a dark hull and has the number 'F31' visible on its side. It has a complex superstructure with various antennas and radar equipment. The ship is moving from left to right, leaving a white wake in the blue water.

INS Brahmaputra is the guided missile frigate of the Indian Navy.

Foundation of a modern navy

The foundations of the modern Indian Navy were laid in the 17th century when the British East India Company established a maritime force. In 1934 the Royal Indian Navy was established, with Indians serving primarily in junior positions. Since Independence, the navy has become an important and powerful arm of defense.

Today, the Indian Navy is fifth largest navy in the world. It has over 55,000 active members including 5,000 members of the naval aviation branch and over 2,000 marine commandos. The Indian Navy has been involved in several wars and operated several successful missions. Recently, in 2008, the Indian Navy deployed the frigate INS Tabar in the waters off Somalia to help battle piracy in the region.

Submarines

The Indian Navy currently has a fleet of 16 diesel-powered submarines. Most of these submarines are of Russian and German origin. Recently India placed an order for six Scorpène submarines. These new submarines will replace several aging machines in the Indian fleet, and bring the force up-to-date. These submarines will join the Indian Navy in 2010-11.

▼ The Indian Navy uses its submarines to patrol the national maritime borders of the country.



Principal Fighting Ships

The Indian Navy is the world's fifth largest navy with a fleet of 145 vessels. The fleet includes missile-capable warships, advanced submarines, the latest naval aircraft and an aircraft carrier.



Indian destroyers

The Indian Navy operates eight destroyers. These ships are armed with Kh-35 missiles and are also installed with surface-to-air missile system to counter air-borne threats. These destroyers can carry 6000 rockets in the anti-submarine role and are provided with five torpedo launch tubes.

Carrier

India has one aircraft carrier – the INS Viraat. It is the flagship of the Indian Navy and the only aircraft carrier in Asia. In 2003, the carrier was fitted with the Barak surface-to-air missile system. In a wartime scenario, the INS Viraat can launch up to 18 combat aircraft. INS Viraat is ideally suited for supporting amphibious operations and conducting anti-submarine warfare.

INS Viraat is the flagship of the Indian Navy and also the only aircraft carrier in the Indian Ocean Region.



Glossary

American Civil War: war between the southern and northern parts of the United States (1861-1865)

artillery: large weaponry that can be transported

cargo: goods carried by big vehicles

combat: war between two military forces

maritime: involving ships or seamen

masts: vertical poles for supporting sails

Napoleonic wars: wars fought between France (led by Napoleon Bonaparte) and an alliance of other European nations

oarsmen: people who row boats

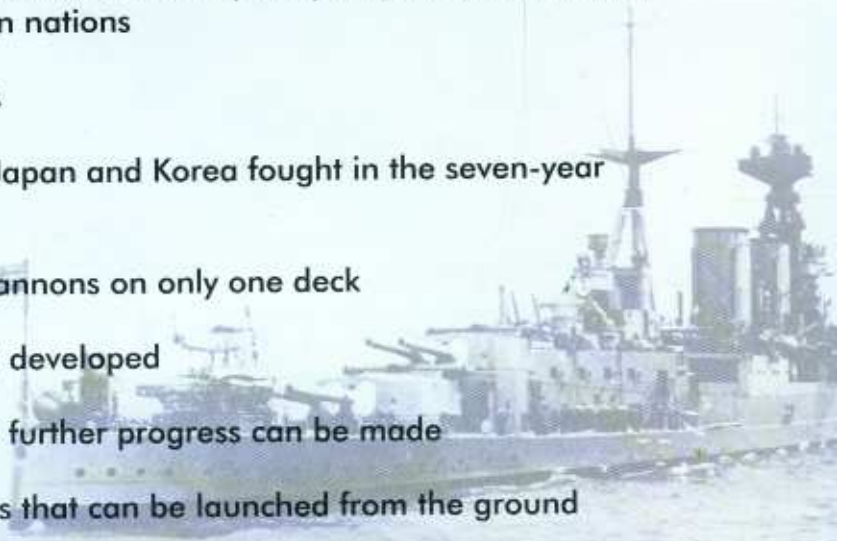
Seven-Year War: war between Japan and Korea fought in the seven-year period between 1592 and 1599

sloop-of-war: warship having cannons on only one deck

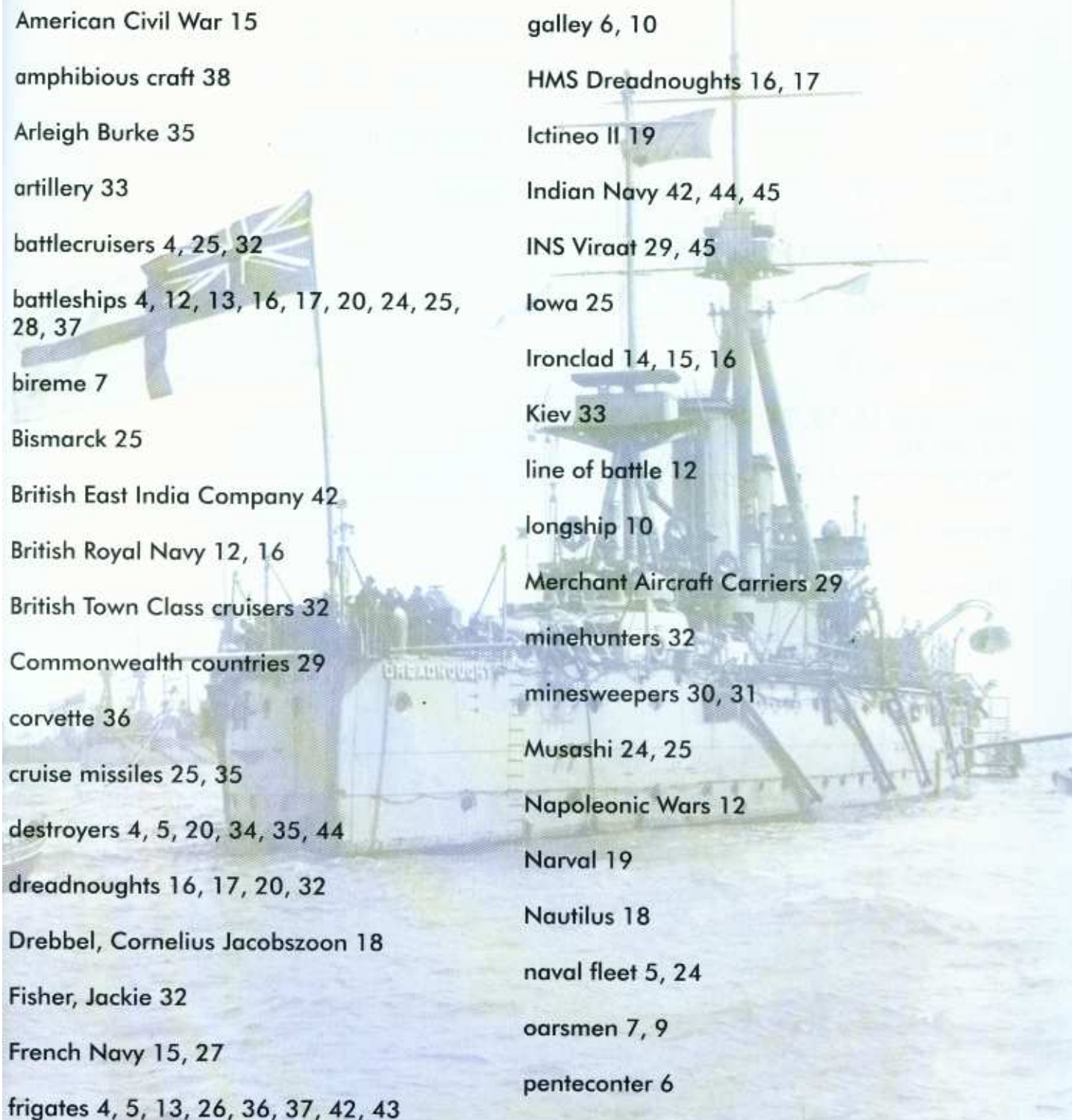
sophisticated: advanced or well developed

stalemate: a situation where no further progress can be made

surface-to-air missiles: missiles that can be launched from the ground to targets



Index

- 
- American Civil War 15
- amphibious craft 38
- Arleigh Burke 35
- artillery 33
- battlecruisers 4, 25, 32
- battleships 4, 12, 13, 16, 17, 20, 24, 25, 28, 37
- bireme 7
- Bismarck 25
- British East India Company 42
- British Royal Navy 12, 16
- British Town Class cruisers 32
- Commonwealth countries 29
- corvette 36
- cruise missiles 25, 35
- destroyers 4, 5, 20, 34, 35, 44
- dreadnoughts 16, 17, 20, 32
- Drebbel, Cornelius Jacobszoon 18
- Fisher, Jackie 32
- French Navy 15, 27
- frigates 4, 5, 13, 26, 36, 37, 42, 43
- galley 6, 10
- HMS Dreadnoughts 16, 17
- Itineo II 19
- Indian Navy 42, 44, 45
- INS Viraat 29, 45
- Iowa 25
- Ironclad 14, 15, 16
- Kiev 33
- line of battle 12
- longship 10
- Merchant Aircraft Carriers 29
- minehunters 32
- minesweepers 30, 31
- Musashi 24, 25
- Napoleonic Wars 12
- Narval 19
- Nautilus 18
- naval fleet 5, 24
- oarsmen 7, 9
- penteconter 6

quadriremes 9, 10

Quinqueremes 9

Q-ship 21

Roman Navy 8

Roosevelt, President Franklin D. 29

Seven-Year War 14

sloop-of-war 13

submarines 18, 19, 21, 22, 35, 36, 37, 42,
43, 44, 45

torpedo boats 34, 37

trireme 7, 9, 10

Turtle 18

U-boat 20, 21, 23

World War I 20, 21, 22, 23, 26, 30

World War II 5, 24, 27, 28, 29, 35, 39, 40

Yamato 24, 25



FIGHTING SHIPS

Ships were used in battles much before the advent of fighting aircraft. Learn about fighting ships – old and modern – in this book that contains interesting and informative images, and easy-to-follow text.

MRP – 105/-

ISBN 978-81-7991-511-0



9 788179 915110



**Popular
prakashan**

www.popularprakashan.com